The enclosed story could be used in several ways: at the upper elementary level,

possibly in a life science unit students would be asked to extract information from

the story provided, questions may include:

Which type of habitat can dolphins be found?

Which living animal is believed to be related to the dolphin?

Where can these animals be found, Which continents may they pass in their travels?

Which function does a blowhole serve, Why is it on the top of their head?

Why do dolphins have blubber?

What does anaerobic respiration refer to? Which substance is produced as a result

of anaerobic respiration?, etc.

An interdisciplinary approach utilizing science, geography and language could

also be used in presenting the information as vocabulary may need to be

defined, range of habitat understood and key anatomical, behavioral an

physiological adaptations explained further. Within the story a link has been included

for a lab which can be conducted to assist students in understanding the processes which

are occurring.

Within the secondary level I would more likely utilize a systemic approach in presenting

Information as the nervous, circulatory and respiratory system all play a role in the physiological,

behavioral and anatomical changes that need to occur. Too often each system is presented

individually and students do not grasp the complex or even sometimes simple interactions which occur

amongst the systems. Comparisons of the systems and how they interact would be discussed first by discussing

individual components of the process and once a thorough understanding was

identified the connections could be made. Mini – labs or experiments would be incorporated in order to enable them to comprehend anaerobic respiration, i.e. holding a set of books with arms locked for a period of time and watch what occurs. Students would then have to summarize what they saw and why they think it happened.

In addition real life similarities and differences between scuba diving and the dolphins would be delved into and a discussion of why these similarities and differences occur and what influence this has on both man and the dolphin?

Teaching Standards addressed by the story

Demonstrates an understanding of evolution, diversity and adaptation of organisms

Demonstrates an understanding of the behavior of the organism

Explain a variety of observations and phenomena

Uses evidence from reliable sources to develop descriptions, explanations, and models and

makes appropriate adjustments and improvements

Proposes, recognizes, analyzes, considers and critiques alternative explanations; and

distinguishes between fact and opinion

Critiques published materials

Explains a scientific concept or procedure to other students

Come follow the life of a dolphin, it’s so exciting and grand

They swim and live in the sea now, but once came from and lived on the land

The ocean was larger and deeper, much larger than land with just ground

And many new sources of food were plentiful and could always be found.

Their closest relative is possibly the hippopotamus; is what people say...

It’s quite unbelievable, isn’t it, that anyone would ever think that way.



With two small rod shaped pelvic bones, scientists seem to feel

They could have walked on land back then but ocean life had more appeal.

Cetacea is the order of dolphins, porpoises and also whales

These large aquatic mammals with flippers, all have flattened tails



They breathe through nostrils on top of their head

Also called blowholes as you’ve probably read



The dolphins are toothed whales – odontoceti is the division they belong Their body is sleek, streamlined and fusiform; which is torpedo shape and strong

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Its skin is smooth and rubbery; all this helps it to swim fast

His blubber helps store energy, and reduces heat loss so it lasts

It is important for thermoregulation and helps keep his body’s streamlined shape This makes him a more efficient swimmer and does not allow heat to escape

Coastal waters to the open ocean is where they can be found

They live in temperate and tropical waters all the world around

From southern California to Chile and Australia to northern Japan

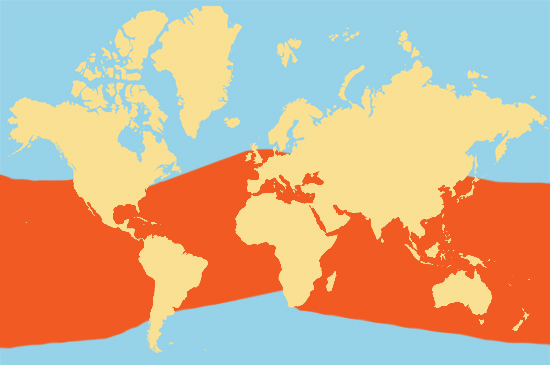
Covers much of the waters in the Pacific which is a very large part of their span

To think about the length of their travels is indeed an incredible notion

Since it also includes Novia Scotia to Patagonia and Norway to the tip of South Africa

- the whole Atlantic Ocean

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In order to dive under water you see

A dolphin needs oxygen just like you and me

A dolphin exhales to empty air from their lungs, when they dive their lungs must be clear

The water spouts out from the top of their head, from their blowhole so please don’t stand near

When the diving begins the dolphin’s heart rate naturally starts to slow down

Shunting blood containing nutrients and oxygen to the brain instead of all around



With the size of his body cavity and his many secrets to unfold He has a larger capacity circulatory system for special proteins which he holds

A dolphin’s blood has hemoglobin, which carry oxygen to their cells that are red An important lifeline as the oxygen needs to travel to its head

Myoglobin stores oxygen for use by muscle tissues Which give them strength to swim the sea without restricting issues

Their muscles need energy for diving, but then… getting energy from glucose without oxygen …. is called anaerobic respiration, which is a name that is quite long And lactic acid builds up which makes you weak instead of strong



At the end of the dive blood vessels open and allow Cells to take back lactic acid and start aerobic respiration now

Dolphins do not get the bends when they dive They don’t breathe air under pressure to stay alive

They inhale at the surface collapsing their lungs as they dive Forcing air into spaces which keeps them alive <http://www.dolphins.org/pdf/DolphinDiversLP.pdf>

Air that is carried down below the surface is in cartilage lined spaces and air goes into areas where gases are not exchanged in these places

To sum it all up when there’s so much to say a dolphins life is complicated in so many ways There are special adaptations that a dolphin needs to survive That enables it to conserve oxygen and successfully learn to dive

When they dive they reduce and slow down their heart rate and store oxygen in their blood for their brain it’s so great

Anaerobic respiration is another great name for muscles working without oxygen, its one in the same



The dolphin is complex and amazing to watch, his beauty you really can’t hide But he has a secret transition that also takes place, these changes occur from inside